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First Named Inventor

Clifford A. Lowe

Art Unit

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Examiner Name

Matzek, Matthew D.

Attorney Docket Number

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Amendment/Reply

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After Final

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Affidavits/declaration(s)

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Extension of Time Request

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Information Disclosure Statement

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Certified Copy of Priority Document(s)

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Reply to Missing Parts/
Incomplete Application

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Reply to Missing Parts
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Change of Correspondence Address

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Appeal Communication to Board
of Appeals and Interferences

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Appeal Communication to TC
(Appeal Notice, Brief, Reply Brief)

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Status Letter

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Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

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16 May 2006

Reg. No.

38,090

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PATENT
Atty. ref. SAT.P.US0007
IN00160USz

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

LOWE

Appl no.: **10/688,583**

Filed: **October 17, 2003**

For: **MULTILAYER GRAPHIC SYSTEMS**

Group art unit: **1771**

Examiner: **M.D. Matzek**

Confirmation no.: **2259**

APPEAL BRIEF

Mail Stop Appeal Brief – Patents
Commissioner for Patents
Post Office Box 1450
Alexandria, Virginia 22313-1450

The 20 claims pending in the subject application were finally rejected in a final Office Action mailed December 19, 2005. An Advisory Action mailed March 2, 2006, indicated that proposed amendments in an Amendment After Final submitted February 16, 2006, would be entered but did not place the application in condition for allowance.

A Notice of Appeal was mailed March 17, 2006. This was accompanied by a Pre-Appeal Brief Request for Review (with accompanying 5-page document) which was considered but did not change the status of the application.

The shortened statutory period for filing an Appeal Brief is believed to be May 17, 2006; thus, this Appeal Brief is submitted to be timely filed. This Brief is accompanied by a form PTO-2038 authorizing the USPTO to charge the \$250.00 fee (small entity) required by 37 C.F.R. § 41.20(b)(2).

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05/19/2006 SHASSEN1 00000020 10688583

01 FC:2402 250.00 OP

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I. Real Party in Interest

The inventor, Clifford A. Lowe, is the real party in interest. Mr. Lowe is the founder and president of a small company based in Rocky Mount, North Carolina; however, the undersigned is aware of no duty, express or implied, that would obligate Mr. Lowe to assign the present invention and/or application to that company.

II. Related Appeals and Interferences

No other prior or pending appeals, interferences or judicial proceedings are known to appellant or the undersigned which may be related to, directly affect, be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of the Claims

Claims 3, 5, 7-13 and 19-29 are pending in the application.

Claims 1-2, 4, 6, and 14-18 were canceled during prosecution.

No claims were withdrawn from consideration.

All pending claims stand rejected. Applicant notes that the first page of the PTOL-326 form of the December 19, 2005, final Office Action does not mention claims 28-29; however, these claims are mentioned in the body of the action, and a call between the undersigned and the examiner confirmed that they are rejected.

The following is a summary of the rejections, each of which is appealed:

- Claims 3, 8, 11-12, 19 and 20-24: 35 U.S.C. § 102(b), anticipated by Mueller et al. (U.S. Patent No. 6,180,228).
- Claims 19, 5, 7-9, 11-12, 20 and 25: 35 U.S.C. § 102(b), anticipated by Kittel et al. (U.S. Patent No. 6,228,486).
- Claims 5, 20, and 25-29: 35 U.S.C. § 103(a), obvious over Mueller et al. (U.S. Patent No. 6,180,228).
- Claim 13: 35 U.S.C. § 103(a), obvious over Mueller et al. (U.S. Patent No. 6,180,228) in view of Ho et al. (U.S. Patent No. 5,468,532).
- Claims 10, 13, and 29: 35 U.S.C. § 103(a), obvious over Kittel et al. (U.S. Patent No. 6,228,486).

IV. Status of Amendments

Proposed amendments to claims 9 and 19, presented in an Amendment After Final submitted February 16, 2006, were entered according to an Advisory Action mailed March 2, 2006. These amendments removed optional limitations which were alleged to render the claims indefinite under 35 U.S.C. § 112, ¶ 2. Applicant chose to delete the optional limitations so as remove an issue from appeal, while noting their lack of narrowing effect.

No other amendment has been proposed after Final Rejection.

V. Summary of Claimed Subject Matter

The pending claims are directed to multilayer graphic articles.

Multilayer graphic laminates of various constructions have been in use for quite some time. The undersigned worked for 3M during a time when its Scotchprint™ product line¹ saw tremendous growth; Avery Graphics has built an extensive business in these products as well. A brief overview of the installation and use of these products can be found at, e.g., <http://www.signweb.com/vinyl/cont/moneyonfloorb.htm>.

As recited in independent claims 19 and 25, the claimed multilayer graphic article includes

- a transparent outer protective layer,
- an outer adhesive layer optionally protected by a release liner, and
- a fabric matrix disposed between the two outer layers.

The image is printed *on the fabric matrix*, the outer protective layer is *disposed on and directly contacts* the printed image, and the outer adhesive layer is *directly disposed on* the lower surface of the fabric matrix. Claim 25 includes two additional limitations:

- the fabric matrix bears primer layers on both of its primary surfaces (such that the printed image is on the *primed* upper surface and that the outer adhesive layer is directly disposed on the *primed* lower surface), and
- the transparent outer protective layer includes a textured upper surface.

Where a layered graphic system is applied to a horizontal surface, the graphic system is subjected to many forces that can stretch or tear the system, e.g., pedestrian or automotive traffic. The height of thicker graphic systems subjects them to even greater forces. Graphic systems that employ thinner polymeric substrates generally have less structural integrity, which is problematical both in normal use and during removal. Graphic systems intended for temporary use must remove readily from an underlying substrate; a system that tears during removal makes replacement difficult and inefficient.

Applicant elegantly resolved this dichotomy between the desire for thin substrates and the need for structural integrity. Perhaps inspired by the textile manufacturing tradition of his native North Carolina, Applicant chose to print images on a textile (fabric) matrix as

¹ Available under the FLOORMINDERS brand in some countries outside the United States.

opposed to the standard vinyl film (i.e., polymeric sheet) employed by commercial giants such as 3M and Avery.

By employing a fabric substrate, the claimed multilayer graphic system entails certain advantages over prior systems. First, the claimed article can be very thin because the fabric print-receiving substrate need not be as thick as standard polymeric substrates to provide equivalent strength; this permits easier handling, installation and, very importantly, removal without tearing. (In regard to the importance of easy removal, see the article available at the URL set forth above.) Second, fabric substrates can be provided with extremely high quality images utilizing very efficient printing processes.

VI. Grounds of Rejection to Be Reviewed on Appeal

The issues on appeal are

- whether claims 3, 8, 11-12, 19 and 20-24 are anticipated by U.S. Patent No. 6,180,228 (hereinafter the '228 patent),
- whether claims 5, 20, and 25-29 are suggested by (i.e., obvious over) the '228 patent,
- whether claim 13 is suggested by the '228 patent in view of U.S. Patent No. 5,468,532 (hereinafter the '532 patent),
- whether claims 19, 5, 7-9, 11-12, 20 and 25 are anticipated by U.S. Patent No. 6,228,486 (hereinafter the '486 patent), and
- whether claims 10, 13, and 29 are suggested by the '486 patent.

These issues are ordered differently from the rejections included in the Final Office Action so that issues based on the '228 patent and issues based on the '486 patent are grouped together.

VII. Argument

Applicant respectfully submits that none of claims 3, 5, 7-13 and 19-29 are anticipated by either the '228 patent or the '486 patent. Further, when those patents are read as a whole from the perspective of an ordinarily skilled artisan at the time that the present application was filed, neither makes obvious – alone or in combination with other references of record – any of the presently pending claims.

As discussed above, the claimed multilayer graphic article includes a transparent outer protective layer, an outer adhesive layer optionally protected by a release liner, and a fabric matrix disposed between the two outer layers. The image is printed on the fabric matrix (which is primed in claim 25). The outer protective layer is *disposed on and directly contacts* the printed image. The outer adhesive layer is *directly disposed on* the lower surface of the fabric matrix (which is primed in claim 25). The transparent outer protective layer includes a textured upper surface in claim 25.

The '228 patent teaches a graphic laminate with a printed image applied to a polymeric substrate,² which is the common approach discussed above. The fact that the polymeric substrate can be reinforced³ has been misinterpreted or read improperly so as to (allegedly) read on the fabric matrix substrate element of pending claims 19 and 25.

The '486 patent is directed to a thermal transfer laminate⁴ in which an ink or graphics layer is applied to facestock and overlain with lamina having a variety of purposes. The facestock⁵ itself is a multilayer construction (see line 9 of col. 3 through line 32 of col. 7), although the Final Office Action refers to it as being (or being the equivalent of) a fabric matrix or support. Some combination of the numerous layers that overlay this facestock are alleged to read on the "outer protective layer" element⁶ of pending claims 19 and 25.

² See cols. 3, 5, and 6 of the '228 patent, particularly col. 6, lines 30-31 in conjunction with col. 5, lines 16-27.

³ See col. 5, lines 37-43 of the '228 patent.

⁴ Often used as warning labels to automotive interiors; see, e.g., col. 12, lines 37-44 of the '486 patent.

⁵ Referred to as element 110 and 210 in the figures of the '486 patent.

⁶ The term "outer" conveys that this layer is situated or located at the outside or exterior of the article, i.e., is not an inner layer. This usage is consistent with numerous issued patents; by way of example, see col. 12, lines 25-33 of U.S. Pat. No. 5,846,620:

[T]he phrase 'outer layer' refers to any film layer ... having less than two of its principal surfaces directly adhered to another layer of the film. ... All multilayer films have two, and only two, outer layers, each of which has a principal surface adhered to only one other layer of the multilayer film.

The remainder of this section is structured so as to discuss each patent and the rejections based thereon together. The '228 patent and rejections based thereon are discussed first, followed by a review of the '486 patent and rejections based thereon.

A. The '228 patent

1. What does it teach?

The graphic laminate from the '228 patent is suitable for outdoor use; see the abstract and lines 44-57 of col. 2. More specifically, this graphic laminate employs a skid-resistant protective layer applied over an image-bearing layer; see lines 8-17 and 43-50 of col. 3 and lines 32-45 of col. 3.

For ease of reference, Figures 1 and 2 from the '228 patent are reproduced below.

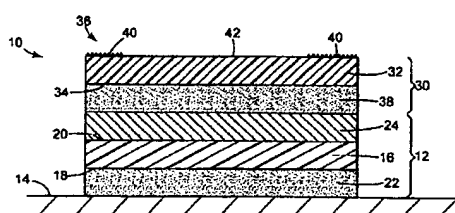


Fig. 1

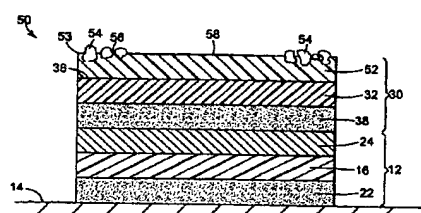


Fig. 2

Element 16, the so-called base layer, receives image layer 24; these two elements together are referred to as imaged base component 12. Element 30 is "an image-protective component" which overlies base component 12 and protects image layer 24. Element 22 is the adhesive layer which bonds graphic article 10 to substrate 14.

Element 16 is described as follows at lines 2-27 of col. 5:

[B]ase layer 16 . . . is preferably a sheet of polymeric film engineered to enhance the strength and/or the flexibility of the graphic article. The film selected for the base layer 16 should be flexible and conformable to irregular substrates. . . . The base layer 16 can be transparent, translucent, substantially clear or colored. In addition, at least one major surface of the base layer 16 must be imageable. . . .

Materials suitable for the polymeric film base layer 16 include alpha-olefins such as polyethylene, polypropylene, and blends and copolymers thereof; ethylene-modified copolymers such as ethylene vinyl acetate, ethylene acrylic acid, ethylene methacrylic acid, ethylene methacrylate and blends and mixed polymers of these materials . . . , polyurethanes, poly(vinyl chloride) and rubbery polymers such as ethylene propylene diene monomer terpolymer, rubber modified polyolefins and styrene butadiene rubbers. A particularly preferred material for the base layer 16 is a vinyl film.

In other words, the '228 patent teaches that base layer 16 is a *polymeric* sheet or film of the type typically employed in graphic articles,⁷ e.g., PE, EVA, PVC, etc. Films made from such materials are transparent but can be colored or made translucent.

Polymeric film base layer 16 can be reinforced with a separate layer as described at lines 34-44 of col. 5 (emphasis added):

... [A] surface of the base layer 16, or selected portions thereof, can be reinforced. For example, a thin metal or foil layer, a woven or nonwoven scrim layer, or a layer of fibrous material ... can be applied to a surface of the base layer with a suitable adhesive, or can be incorporated between two layers if (sic) polymeric film to form a reinforced base sheet-like construction. ...

Lines 47-50 of col. 5 and lines 30-31 of col. 6 go on to explain that this optional reinforcing layer, when used, is positioned between base layer 16 and adhesive layer 22, i.e., does not constitute part of base layer 16.

2. Rejections based on the '228 patent

a. 35 U.S.C. § 102(b): claims 3, 8, 11-12, 19 and 20-24

The non-final official action mailed May 31, 2005, rejected then-pending claims 1-4, 6-12, and 15-16⁸ as follows:

4. Mueller et al. disclose an outdoor advertising or display system including a multi-layer graphic article intended for application to an outdoor surface (Abstract). The base layer (fabric matrix or support) may be a film (16 Figs. 1 and 2), but may be reinforced with a woven or nonwoven scrim layer, or a layer of fibrous material (col. 2, lines 30-32 and col. 5, lines 37-40). On a first major surface (lower surface) of the base layer an adhesive layer (22 Figs. 1 and 2) is applied (col. 5, lines 48-50). An image layer (24 Figs. 1 and 2) is disposed on a second major surface (upper surface) of the base layer (col. 6, lines 30-32). An adhesive layer (38 Figs. 1 and 2) is used to adhere the image-protective layer to the image layer (24) (col. 7, lines 25-39).

Applicant's response noted that the '228 patent explicitly teaches that that the optional reinforcement is a separate, distinct layer and not part of base layer 16 and, further, that image layer 24 necessarily is separated from the optional reinforcement layer by base film 16 which is taught as receiving the image.

⁷ Despite use of the term "preferably" in the cited passage, no other materials from which layer 16 can be formed are taught.

⁸ Claim 1 was canceled and replaced by claim 19; claims 2-4, 6 and 15-16 were canceled.

However, the final Office Action maintained the rejection under 35 U.S.C. § 102(b) (of the then-pending claims) with the following modification/additional description:

4. Claims 3, 8, 11, 12, 19 and 20-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Mueller et al. (US 6,180,228).
 - a. Mueller et al. disclose an outdoor advertising or display system including a multi-layer graphic article intended for application to an outdoor surface (Abstract). The base layer (fabric matrix or support) may be a film (16 Figs. 1 and 2), but may be reinforced with a woven or nonwoven scrim layer, or a layer of fibrous material (col. 2, lines 30-32 and col. 5, lines 37-40). Examiner equates the applied film to the instantly claimed fabric matrix and nonwoven fabric matrix. Support for said equation is provided by definitions of “textile film” and “fabric textiles” as provided by www.fibre2fashion.com, which explains that a textile film is a textile material (fabric) and a fabric textile includes nonwoven articles. On a first major surface (lower surface) of the base layer an adhesive layer (22 Figs. 1 and 2) is applied (col. 5, lines 48-50). An image layer (24 Figs. 1 and 2) is disposed on a second major surface (upper surface) of the base layer (col. 6, lines 30-32). The image-protective component 30 overlies the image layer 24 and is substantially clear or transparent (col. 7, lines 4-13). A release liner may be placed on the adhesively treated base film (col. 4, lines 17-20).

Applicant respectfully submits that this rejection is improper for any of a number of reasons.

First, the examiner has failed to show that the website cited in support of his reading was in existence at the filing date of the present application such that it constitutes a valid prior art reference. This requirement is designed to ensure that the claimed subject matter is being evaluated from the standpoint of an ordinarily skilled artisan as of the filing date of the application, here October 17, 2003.

Second, the “equates” and “said equation” statements indicate that the examiner treated the disclosure of the '228 patent, as read in view of the definitions contained in the noted website, to teach print-receiving layers that include non-woven fibers. If this interpretation is correct,⁹ Applicant submits that this constituted an improper use of a

⁹ Citation to the website was included in a review of the '228 patent. If the recitation of website terms was intended to be read in reverse – i.e., the claims are directed to a non-woven fabric which is the same as a fabric textile which is the same as a textile film – Applicant maintains the argument, *mutatis mutandis*, and notes that the '228 patent does not teach a so-called textile film.

secondary reference. Extrinsic evidence may be used to *explain but not expand* the meaning of terms and phrases used in the reference relied upon as anticipatory of the claimed subject matter; In re Baxter Travenol Labs., 21 U.S.P.Q.2d 1281 (Fed. Cir. 1991). With respect to reinforcement, the '228 patent uses phrases such as “woven or nonwoven scrim layer,” “layer of fibrous material,” etc. (emphasis added). The examiner has chosen to ignore the clarity and consistency of this teaching and, instead, rely on an fashion/garment industry B2B website¹⁰ to expand the teaching of the '228 patent. Specifically, the examiner now equates the “reinforced base sheet” of the '228 patent, as magically transfigured by “definitions” from a fashion/garment industry middleman, to the fabric matrix element of the pending claims.

Third, the definitions cited by the examiner (provided below for ease of reference) do not support his stated position:

Fabric (textile)	A Manufactured Assembly Of Fibres And/or Yarns That Has Substantial Surface Area In Relation To Its Thickness And Sufficient Mechanical Strength To Give The Assembly Inherent Cohesion. , Note: Fabrics Are Most Commonly Woven Or Knitted, But The Term Includes Assemblies Produced By Lace-making, Tufting, Felting, Net-making, And The So-called Nonwoven Processes.
Textile	Originally A Woven Fabric But The Term Is Now Applied To Fibres, Filaments, Or Yarns, Natural Man-made, And Products Obtained From Them. Note: For Example, Threads, Cords, Ropes, Braids, Lace, Embroidery, Nets, And Fabrics Made By Weaving, Knitting, Felting, Bonding, And Tufting Are Textiles. Used As An Adjective, Descriptive Of Fibrous Or Filamentous Manufactures And Of The Raw Materials, Processes, Machines, Buildings, And Personnel Used In The Organizations Connected With, And The Technology Of, Their Manufacture.
Textile Film	A Man-made Textile Material In Film Form Within Which Molecular Orientation Is Predominantly In The Longitudinal Direction. Note: Polymer Films For Non-textile Use Are Commonly Unoriented Or Bi-axially Oriented, But Uni-axial Orientation Is Present In Some Cases.

Nowhere does the definition of “textile film” imply or suggest that such a film employs or incorporates fibers; in fact, it uses phrases like “in film form” and “molecular orientation” which indicate that it is referring to polymeric sheets/films similar to those described in the aforementioned U.S. Patent No. 5,846,620¹¹ (other than the noted uniaxial vs. biaxial or non-oriented distinction). Further, the definitions employ title case format, i.e., all words start with a capital letter, so that the Textile Film definition should not be read to incorporate the preceding definition of Textile through its use of the word “textile” with a capital T; doing

¹⁰ Without a showing that one of ordinary skill in the graphic laminates art would look to the fashion/garment industry for such guidance.

¹¹ See n. 6.

so would make the definition nonsensical. (Query: What is the molecular orientation of a fiber or yarn?)

Fourth, the examiner could not have arrived at the reading included in the final Office Action without the benefit of Applicant's own teaching. In this regard, note the discussion above with respect to expansion as opposed to explanation regarding the clear and consistent teaching of the '228 patent concerning the distinct nature and positioning of the reinforcement layer relative to the base layer. Based on the teaching of the '228 patent, how was a *circa* 2003 ordinarily skilled artisan to conclude that the '228 patent's base film, which optionally can have all or a portion of one of its surfaces reinforced with a separate layer, really should be read as a "textile film" (as defined by an offshore fashion/garment industry B2B portal, not shown to have been in existence in 2003) which, in turn, really is the same as a textile or fabric based on other definitions included in that same website? Applicant submits that the only logical answer is impermissible hindsight.

For at least the foregoing reasons, Applicant respectfully submits that the '228 patent has been shown to not anticipate independent claim 19 and claims 3, 8, 11-12 and 20-24 which depend therefrom.

Further, because the '228 patent nowhere suggests removing base film 16 or substituting a fabric layer therefor, it cannot be said to suggest those same claims.

b. 35 U.S.C. § 103(a) based on the '228 patent alone: claims 5, 20, and 25-29
1. Claims 5, 20, and 25

Claims 5 and 20 depend from claim 19 and modify that independent claim by further requiring, respectively, that the upper surface of the fabric bear a primer layer derived from a composition that includes an acrylic resin or a urethane resin and that the lower surface of the fabric bears a primer layer derived from a composition comprising a latex or polyurethane. Based on the preceding section, Applicant has shown that the '228 patent neither teaches nor suggests the invention set forth in claim 19. Accordingly, claims 5 and 20 are further patentable over that reference.

Claim 25, which is independent, includes limitations that both of the upper and lower surfaces of the fabric be primed as set forth above with respect to claims

5 and 20. Thus, for at least the reasons that claims 5 and 20 are not suggested by the '228 patent, claim 25 likewise is not suggested.

Moreover, the reasoning in support of this obviousness rejection is, at best, questionable. Specifically, the examiner has pointed to col. 5, lines 60-65 (relating to the types of adhesives that are useful in adhesive layer 22, located on the surface of base film 16 that is opposite the printed image) and col. 7, lines 36-38 (relating to the types of adhesives that are useful in adhesive layer 38 which overlays printed image 24, i.e., does not contact base film 16) as motivation for selection of acrylic or urethane resins as primers for the lower surface of the print-receiving fabric matrix.

Is the use in graphic articles of acrylic or urethane resins *for any purpose* made obvious by their inclusion in adhesive layers of the '228 patent? This appears to be logical conclusion of the examiner's citation to the noted portions of the '228 patent in his rejection of claims 5, 20, and 25.

To the contrary, Applicant submits that the inclusion of particular resins in a separate adhesive layer does not make obvious their use as fabric layer primers.

2. Claim 29

This claim depends from claim 25 and modifies that independent claim by requiring that the outer protective layer have a thickness of from about 7 to about 8 mils. Based on the preceding subsection, Applicant has shown that the '228 patent neither teaches nor suggests the invention set forth in claim 25. Accordingly, claim 25 is further patentable over that reference.

Further, the examiner has failed to explain why any thickness of protective layer used over an image-bearing fabric substrate constitutes "discovering the optimum or workable ranges" where the reference in question is completely silent about the property in question, i.e., does not consider it to be relevant to the utility or function of the described invention.

c. 35 U.S.C. § 103(a) based on the '228 patent in view of U.S. Pat. No. 5,468,432: claim 13

This claim depends from claim 19 and modifies that independent claim by specifying that the outer protective layer has a thickness of from ~2 to ~15 mils. Based on the

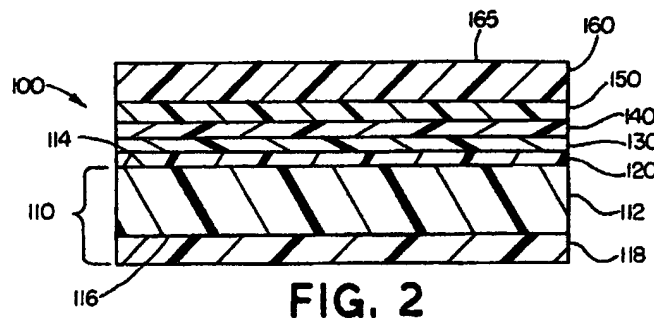
preceding section, Applicant has shown that the '228 patent neither teaches nor suggests the invention set forth in claim 19; accordingly, claim 13 is further patentable over that reference.

The secondary reference is cited only to show that protective layers having thicknesses of 51 μm (2 mils) are known. Applicant respectfully submits that the secondary reference does not remedy the deficiencies already shown with respect to the primary reference.

B. The '486 patent

1. What does it teach?

The thermal transfer laminate from the '486 patent can be used in a variety of automotive interior applications such as, e.g., warning labels on visors; see, e.g., col. 12, lines 37-44. For ease of reference, Figure 2 from the '486 patent is reproduced below.¹²



In this figure, 110 is the facestock (with 118 being a heat-activatable adhesive and 112 being a print-receiving layer), 120 is the graphics layer, 130 is an adhesion-promoting layer, 140 is abrasion-resistant transparent coating layer, 150 is an adhesive layer, and 160 is a carrier sheet.

First layer 112 of facestock 110 "may be comprised of metal foil, polymer film, paper sheet, or combinations thereof" (col. 3, lines 36-38) but also "may be comprised of textile including woven and non-woven fabrics made of natural or synthetic fibers" (col. 3, lines 38-

¹² As explained during prosecution, Fig. 2 is deemed representative for purposes of discussion. More particularly, the embodiment shown in Fig. 3 employs a facestock that includes upper thermoplastic film layer 220 as a print receiving surface; see lines 42-48 of col. 2. Thus, the embodiment shown in Fig. 2 probably is more relevant to the present discussion.

40). Thus, where first layer 112 is “comprised of ... fabrics made of natural or synthetic fibers,” graphics layer 120 apparently directly contacts a fabric layer.

As described in the paragraph that bridges cols. 9-10, adhesion promoting layer 130 “is typically composed of a lacquer and a diluent,” and abrasion-resistant coating layer 140 “is made from UV curable oligomers such as epoxies, urethanes, polyester, acrylics, and the like.”¹³

In the paragraph that bridges cols. 10-11, adhesive layer 150 is said to preferentially adhere to carrier sheet 160 so that it can separate from coating layer 140 during removal of carrier sheet 160.

2. Rejections based on the '486 patent

a. 35 U.S.C. § 102(b): claims 5, 7-9, 11-12, 19-20 and 25

1. Argument applicable to claim 25 only

Applicant respectfully submits that, both legally and logically, claim 25 cannot be anticipated by the '486 patent where that same reference was found to neither teach or suggest claim 24. Both claims require that the transparent outer protective layer include a textured upper surface. The '486 patent is silent with respect to the texture of the upper surface and thus does not teach it for anticipation purposes (although the ordinarily skilled artisan would expect a thermal transfer laminate to employ a smooth surface given its intended end uses). Accordingly, at a bare minimum, the § 102(b) rejection of claim 25 should be reversed.

2. Argument applicable to claims 5 and 25

While Applicant's responses have focused on the failure of the '486 patent to teach independent claims 19 and 25, the rejection of dependent claim 5 (and, because it includes a similar limitation, independent claim 25) also merits reversal.

The anticipation rejection in question reads as follows:

¹³ In addition to UV curing, cationic curing of certain materials (e.g., epoxies) also is taught.

c. Claims 5, 19, 20 and 25 are rejected as tie layers of adhesive resin (primer) may be placed on the upper and lower surfaces of the facestock layer (col. 8, lines 59-61). These adhesive tie layers may comprise polyurethane (col. 9, lines 48-67). The facestock layer (fabric matrix) typically has a thickness of about 1 to about 25 mils or 0.0025 cm to 0.63 cm (calculation performed by Examiner) (col. 3, lines 9-12). The adhesive layer thickness may range from about 0.00025 cm to 0.013 cm (calculation performed by Examiner) (col. 3, lines 15-18).

For ease of reference, lines 54-61 of col. 8 are provided immediately below, with lines 54-58 being provided so as to put the cited portion in better context:

The layers 112, 118, 212, 220 and/or 230, may contain a
55 minor amount of an adhesive material to enhance the
adhesion of the layers 112 and 118 to each other, or the
layers 220 and/or 230 to the core layer 212. Also, or
alternatively, tie layers of an adhesive resin can be posi-
tioned between the film layers 112 and 118, or between the
60 core layer 212 and either or both of the film layers 220 and
230 for enhancing adhesion.

By reading this portion in conjunction with Fig. 2 supra, one can see that tie layers are taught only with respect to increasing inter-ply adhesion within the facestock; see, e.g., “enhance the adhesion of the layers 112 and 118 to each other” and “can be positioned between the film layers 112 and 118” (emphasis added). (While the figure showing elements 212, 220 and 230 has not been provided here, even a cursory review of that figure shows that the subject of this paragraph is solely inter-ply adhesion within the facestock.)

Only if the emphasized portions of this text are ignored completely can this section be deemed relevant to the issue at hand. The portion cited by the examiner in support of this anticipation rejection does not teach providing the print receiving surface with a primer layer. In fact, the cited portion of text is not even concerned with or directed that particular surface.

3. Arguments applicable to claims 5, 7-9, 11-12, 19-20 and 25

The non-final official action mailed May 31, 2005, rejected then-pending claims 1, 4, 6-8, 11, and 15-16¹⁴ as follows:

16. Kittel et al. disclose a thermal transfer laminate comprising a facestock (fabric matrix or support), an underlying adhesive layer, an overlying adhesive layer (primer), a transparent, abrasion resistant layer (protective coating) overlying the adhesive layer and another overlying adhesive layer on top of the abrasion resistant layer (Abstract). In one embodiment an ink or graphic layer overlies the upper surface of the facestock layer (Abstract).

17. Claims 7 and 8 are rejected as the facestock layer may comprise a core that may be made of either woven or nonwoven fabric (col. 3, lines 38-40).

18. Claims 4 and 6 are rejected as tie layers of adhesive resin (primer) may be placed on the upper and lower surfaces of the facestock layer (col. 8, lines 59-61).

19. The facestock layer (fabric matrix) typically has a thickness of about 1 to about 25 mils or 0.0025 cm to 0.63 cm (calculation performed by Examiner) (col. 3, lines 9-12). The adhesive layer thickness may range from about 0.00025 cm to 0.013 cm (calculation performed by Examiner) (col. 3, lines 15-18).

Applicant's response noted that the '486 patent explicitly teaches that that the graphics layer 120 is separated from transparent protective layer 140 by an entirely separate layer, specifically adhesion promoting layer 130, and that both independent claim 19 and independent claim 25 expressly require that the outer protective layer be disposed on and directly contact the printed image.¹⁵

The final Office Action addressed this point as follows:

¹⁴ Claim 1 was canceled and replaced by claim 19; claims 4, 6 and 15-16 were canceled.

¹⁵ That response also argued that transparent protective layer 140 also was not an outer layer, as required in both of claims 19 and 25. However, with the benefit of additional review and reflection, Applicant believes that the paragraph that bridges cols. 10-11 suggests that, in use, layer 140 can become an outer layer of the structure.

Examiner takes the position that the protective coating layer includes the abrasion resistant layer and underlying adhesive layer. The instant claims do not preclude such an embodiment.

(The phrase “underlying adhesive layer” appears to refer to the *adhesion promoting* layer, i.e., element 130. The adhesive layer closest to protective layer 140 is layer 150, which is above protective layer 140.)

First, Applicant respectfully submits that the issue at hand relates not to whether the presently used claim language precludes a particular interpretation but, instead, to the propriety of the interpretation of the reference proffered by the examiner. Specifically, is that interpretation in accord with how one of ordinary skill in the art at the relevant time period could or would have read and understood it?

As noted in Applicant’s argument in support of a pre-appeal brief request for review, adhesion promoting layer 130 (described in the paragraph that bridges cols. 9-10) and abrasion-resistant coating layer 140 (described at col. 10, lines 9-29) are formed separately: the former “is typically composed of a lacquer and a diluent” (lines 52-53 of col. 9) and thus is formed through coalescence whereas the latter “is made from UV curable oligomers such as epoxies, urethanes, polyester, acrylics, and the like” (lines 13-15 of col. 10).¹⁶

In addition to being formed separately and by different processes, the two layers have distinct functions: protective layer 140 provides abrasion resistance to the article while the adhesion promoting layer “increase[s] the adhesion of coatings to a film substrate” (col. 9, lines 50-51).

Thus, abrasion-resistant layer 140, which is the only layer taught to serve a protective function, is not “disposed on” and does not “directly contact” graphics layer 120; conversely, adhesion-promoting layer 130 is disposed on and directly contacts graphics layer 120, but does not serve a protective function. Accordingly, the ’486 patent itself contains no support for the reading or interpretation proffered by the examiner. Because the examiner has failed to cite any other teaching in

¹⁶ In addition to UV curing, cationic curing of certain materials (e.g., epoxies) also is taught.

support of this interpretation, Applicant submits that it is unfounded and not in accordance with established law and procedure.

Second, Applicant respectfully submits that other portions of the '486 patent itself suggest that such a reading is, in fact, not in accord with the invention intended to be described. For example, the '486 patent calls out heat-activatable adhesive 118 and print receiving layer 112 as separate layers but also refers to them collectively as facestock 110. Thus, the '486 patent knows how to (and, in fact, does when it desires to do so) indicate that multiple layers can be treated as a unitary element for certain purposes.

Third, the assertion in the final Office Action that "[t]he instant claims do not preclude such an embodiment" is in conflict with the language employed in the those claims. At a minimum, the article an in the phrase "an outer protective layer" implies or indicates that the layer in question is unitary and applied by a single process. Applicant did not employ language that would suggest that the protective function could be served by more than one layer or that those layers could be applied sequentially, e.g., "one or more protective layers overlying said printed image." (Use of the adjective "outer" means that the protective layer constitutes one of the two outermost layers of the structure. While there might be other protective layers, there can be only one outer protective layer, and use of the linking term "comprising" does not change this.)

For at least these reasons, the anticipation rejection of claims 5, 7-9, 11-12, 19-20 and 25 should be reversed as improper.

b. 35 U.S.C. § 103(a): claims 10, 13 and 29

The final Official Action rejected these claims as being obvious over the '486 patent alone. For at least the reasons that follow, Applicant respectfully submits that these rejections are improper and should be reversed.

Applicant believes that the conclusory nature of the language employed in the rejection of claim 10, set forth below, speaks for itself; however, the Board is invited to consider whether the sweeping nature of the statement might not be applicable, in the future, to every fabric made from fibers or yarns that happen to employ polymers that

happen to be in the same chemical class as those used previously to make films (and vice versa).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as obvious over Kittel et al. (US 6,228,486). While Kittel et al. is silent to the specific composition of the woven or nonwoven fabrics used in the facestock layer, it would have been obvious to have made said fabric from chemical species listed in instant claim 10 as it is disclosed that the fabric is to be made from natural or synthetic fibers and Kittel et al. teach the use of polyamides and polyesters in the facestock layer (col. 3, lines 37-63). The Examiner interprets that the compositions taught by Kittel et al. for the polymeric film of the facestock are suitable materials for nonwoven or woven substrates since the reference teaches that the facestock may include both films and nonwoven/woven substrates it would have been obvious to one of ordinary skill in the art at the time of the invention to have made both layers out of the same material. The skilled artisan would have been motivated to use a constant chemical composition throughout the invention in efforts to minimize costs and maximize the compatibility between layers.

In other words, a paragraph that is concerned with an embodiment where layer 112 is a polymer film (i.e., the one that bridges cols. 3-4) has been deemed, without any apparent reason other than the examiner's insight (hindsight?), to be applicable to an embodiment where layer 112 "may be comprised of textile". Applicant submits that the impropriety of this is apparent and that this rejection should be reversed.

The rejection of claims 13 and 29 (outer protective layer thicknesses of ~2-15 mils and ~7-8 mils, respectively) is even worse in that mischaracterizes the teaching of the '486 patent before making its conclusory leap:

9. Claims 13 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kittel et al. (US 6,228,486). The invention of Kittel et al. is silent as to making the graphic article with outer protective layers with the instantly claimed thicknesses. Claims 13 and 29 are rejected as it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have made the protective layer of Kittel et al. in the instantly claimed ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges only involves routine skill in the art. *In re Aller*, 105 USPQ 233.

However, the '468 patent is not silent with respect to the thickness of protective layer 140. At lines 54-58 of col. 13, an exemplary abrasion-resistant layer is shown as having a thickness of 2 μm – i.e., 0.5 mils – which is from 4 \times to 30 \times thinner than the range from claim 13 and from 14 \times to 16 \times thinner than the range from claim 29. Particularly given the nature of the intended uses of the thermal transfer laminate of the '486 patent, the question that arises is, "What would motivate the ordinarily skilled artisan to provide a protective layer that is so much more thick than that which is taught?"

In summary, in addition to the fact that claims 10, 13, and 29 depend from allowable claims, they contain separately patentable features in view of the cited art of record.

Conclusion

The undersigned apologizes to the Board for the length of this Brief. In addition to including reproduced portions of the relevant prosecution history for ease of reference (which appears to have added at least 3 pages to its length), the Brief includes an unusual amount of detailed review because the undersigned so strongly believes that the cited references have not been shown to teach or suggest the claimed inventions.

In view of the foregoing, claims 3, 5, 7-13 and 19-29 are submitted to be in condition for allowance. Accordingly, the rejections under 35 U.S.C. §§ 102(b) and 103(a) should be overturned.

Respectfully submitted,



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VIII. Appendix – Claims on Appeal

3. The article of claim 19, further comprising anti-skid particles attached to or integral with said outer protective layer.
5. The article of claim 19, where said upper surface of said fabric bears a primer layer derived from a composition comprising an acrylic resin or a urethane resin.
7. The article of claim 19, where said fabric matrix is woven.
8. The article of claim 19, where said fabric matrix is non-woven.
9. The article of claim 19, where said fabric matrix includes filaments or fibers.
10. The article of claim 9, where the fibers or filaments comprise polyaramids, polyesters, polyolefins, or polyamides.
11. The article of claim 19, where said fabric matrix has a thickness of about 0.005 cm to about 0.05 cm.
12. The article of claim 19, where said adhesive layer has a thickness of about 0.005 cm to about 0.025 cm.
13. The article of claim 19, where said outer protective layer has a thickness of about 2 mils to about 15 mils.

19. A multilayer graphic article comprising:
 - a) a transparent outer protective layer,
 - b) an outer adhesive layer, optionally protected by a release liner, and
 - c) disposed between said outer layers, a fabric matrix comprising upper and lower surfaces and bearing on its upper surface a printed image,wherein said outer protective layer is disposed on and directly contacts said printed image and wherein said outer adhesive layer is directly disposed on said lower surface of said fabric matrix.
20. The article of claim 19 wherein said lower surface of said fabric bears a primer layer derived from a composition comprising a latex or polyurethane.
21. The article of claim 19 wherein said outer protective layer comprises a polyurethane.
22. The article of claim 21 wherein said polyurethane is provided from an aqueous dispersion.
23. The article of claim 21 wherein said outer protective layer further comprises an acrylic or epoxy component.
24. The article of claim 19 wherein said outer protective layer comprises a textured upper surface.

25. A multilayer graphic article comprising:
- a) a transparent outer protective layer comprising a textured upper surface,
 - b) an outer adhesive layer, optionally protected by a release liner, and
 - c) disposed between said outer layers, a fabric matrix comprising upper and lower surfaces, said upper surface bearing a primer layer derived from a composition comprising an acrylic or urethane resin, said lower surface bearing a primer layer derived from a composition comprising a latex or polyurethane, said primed upper surface of said fabric bearing a printed image,
- wherein said outer protective layer is disposed on and directly contacts said printed image and wherein said outer adhesive layer is directly disposed on said primed lower surface of said fabric matrix.
26. The article of claim 25 wherein said outer protective layer comprises a polyurethane, said polyurethane optionally being provided from an aqueous dispersion.
27. The article of claim 25 wherein said outer protective layer further comprises an acrylic or epoxy component.
28. The article of claim 25 wherein said outer protective layer further comprises anti-skid particles attached to or integral therewith.
29. The article of claim 25 wherein said outer protective layer has a thickness of from about 7 to about 8 mils.

IX. Appendix – Evidence

none

X. Appendix – Related Proceedings

none